

ABSTRACT OF THE DISCLOSURE

A color-separating and -recombinining optical system includes a cubic- or square column-like first to fourth polarization beam splitters having polarization-splitting planes intersecting each other like a character- "X" and wavelength-selective polarizing converters each for rotating the plane of polarization of a specific-color light component by 90 degrees. One of the converters is placed at a light-incident side of the first splitter. Another of the converters is placed at a light-emitting side of the fourth splitter. The first and the fourth splitters are provided at a light-incident side and a light-emitting side, respectively, of the optical system. The first and the fourth splitters are arranged as diagonally opposing each other. The remaining converters are placed between at least two inner facing planes of the first to the fourth splitters. At least the remaining converters and three of the first to the fourth splitters are joined each other to form an optical joint component with a gap between the remaining one splitter. Opto-elastic constants for the first to the fourth splitters may have a relationship $K_i < K_m$ and K_o , K_i and $K_m < K_o$ or $K_i < K_m < K_o$ in which K_i , K_m and K_o denote the opto-elastic constants for the first splitter, the second and the third splitters and the fourth splitter, respectively. A light blockage may be provided at an intersection of the polarization-splitting planes and surrounded by the first to the fourth splitters, the light blockage preventing light leakage from the first to the fourth splitters.

20090406-2026240007